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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,238	10/03/2003	Ye Soong	S-100,793	9112

31970 7590 11/17/2004

UNITED STATES DEPARTMENT OF ENERGY
1000 INDEPENDENCE AVENUE, S.W.
ATTN: GC-62 (CHI) MS 6F-067
WASHINGTON, DC 20585-0162

EXAMINER	
LARKIN, DANIEL SEAN	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

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Office Action Summary	Application No. 10/677,238	Applicant(s) SOONG ET AL.
	Examiner Daniel S. Larkin	Art Unit 2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2004*.

2a)☐ This action is FINAL. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 16* is/are rejected.

7)☒ Claim(s) *6-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *24 June 2004*.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "14a" has been used to designate both a "propeller blade", as shown in Figure 1, and a "shaft of the stirrer", as shown in Figure 1.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Reference numeral -- 14b -- does not appear in Figure 1, as suggested by the disclosure on page 8, line 17.

3. The drawings are objected to because of the following:
Reference box "42", as shown in Figure 1, should also be labeled -- computer --.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Reference numerals "98" and "98a", as shown in Figure 24C, do not appear within the written specification.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicants will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The disclosure is objected to because of the following informalities:

Page 7, line 12: The conjunction -- and -- should be inserted after the term "pressures".

Page 7, line 15: The "semicolon" should be corrected with a -- period --.

Page 20, line 15: The term "approximately145.4" should be corrected to read -- approximately 145.4 --. Appropriate correction is required.

Claim Objections

8. Claims 1-15 are objected to because of the following informalities:

Re claim 1, claim line 6: The conjunction -- and -- should be inserted after the term "signals".

Re claim 11, claim line 1: The phrase "said coupling rod" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,567,765 (Rao et al.) in view of US 6,039,059 (Bran).

With respect to the limitations of claim 1, the reference to Rao et al. discloses an autoclave system for testing fluid samples, such as cement slurries or any fluid sample comprising a sealed container (150) holding the slurry; and first and second transducers (not shown) for transmitting and receiving ultrasonic signals. The reference to Rao et al. fails to disclose that each transducers is placed within an isolating coupler which isolate the transducers from heat and pressure in the sealed container (150). The reference to Bran discloses a wafer cleaning device which utilizes a transducer (140) placed within an isolating coupler (120) which isolates the transducer from a container (100). Providing means for isolating each transducer from the sealed container would have been obvious to one of ordinary skill in the art as a means limiting the heating of the transducer such that one ensures that one is always able to operate the acoustic transducer up to the allowable acoustic intensity limit without having to deal with temperature contamination from the container.

With respect to the limitation of claim 2, the reference to Rao et al. fails to disclose a source of coolant connected to each coupler. The reference to Bran discloses that coolant is supplied to an annular groove (136) to suitably cool the apparatus, col. 4, lines 65-67 and col. 6, lines 29-46. Providing means to cool the transducer would have been obvious to one of ordinary skill in the art as a means of ensuring that one is always able to operate the acoustic transducer up to the allowable acoustic intensity limit while also maintaining acceptable surface temperatures regardless of how small the transducer is or how much surface area it offers for cooling relative to its acoustic intensity.

With respect to the limitation of claim 3, the reference to Rao et al. appears to show that a closed housing appears around the transducers placed within the transducer bores.

With respect to the limitations of claims 4 and 5, the reference to Rao et al. fails to disclose that the housing is in the general form of a disc. The reference to Bran appears to show that the housing (120) is in the form of a disc having a lateral wall with a port (146) for connection with the source of coolant (124); and opposed end walls coupled to the sealed container (100) and to the transducer (140). Providing a disc shaped housing would have been obvious to one of ordinary skill in the art as a means of reducing the size of the transducer housing as well as allowing the housing to more easily mate to a cylindrical container.

With respect to the limitations of claim 16, the reference to Rao et al. discloses an autoclave system for testing fluid samples, such as cement slurries or any fluid sample comprising a sealed container (150) holding the slurry; and first and second transducers (not shown) for transmitting and receiving ultrasonic signals. The reference to Rao et al. fails to disclose that each transducers is placed within an isolating coupler which isolate the transducers from heat and pressure in the sealed container (150) and a source of coolant connected to each coupler. The reference to Bran discloses a wafer cleaning device which utilizes a transducer (140) placed within an isolating coupler (120) which isolates the transducer from a container (100). A source of coolant is supplied to an annular groove (136) to suitably cool the apparatus, col. 4, lines 65-67 and col. 6, lines 29-46. Providing means to cool the transducer would have been obvious to one of ordinary skill in the art as a means of ensuring that one is always able to operate the acoustic transducer up to the allowable acoustic intensity limit while also maintaining acceptable surface temperatures regardless of how small the transducer is or how much surface area it offers for cooling relative to its acoustic intensity.

Allowable Subject Matter

11. The following is a statement of reasons for the indication of allowable subject matter:

Prior art was not relied upon to reject claims 6-15 because the prior art fails to teach and/or make obvious the following:

Claims 6-14: Providing a coupler which includes an adapter for connecting a closed housing to a sealed container, wherein the adapter comprises an inner coupling rod and an outer bushing disposed about the rod and connected to the rod in combination with all of the limitations of the base independent claim and any intervening claims.

Claim 15: Providing a thermowell within each coupler adjacent the transducer in combination with all of the limitations of the base independent claim.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

The prior art to US 5,936,163 (Greathouse) discloses a portable ultrasonic testing piezo probe with cooling apparatus.

The prior art to US 5,992,223 (Sabins et al.) discloses an acoustic method for determining gel strength of a cement slurry within an autoclave reactor.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin
AU 2856
15 November 2004

DANIEL S. LARKIN
PRIMARY EXAMINER

Notice of References Cited	Application/Control No. 10/877,238	Applicant(s)/Patent Under Reexamination SOONG ET AL.	
	Examiner Daniel S. Larkin	Art Unit 2856	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-4,567,765	02-1986	Rao et al.	73/594
*	B	US-5,936,163	08-1999	Greathouse, John D.	73/644
*	C	US-5,992,223	11-1999	Sabins et al.	73/64.42
*	D	US-6,039,059	03-2000	Bran, Mario E.	134/105
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
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	P					
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	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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